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Generational perspectives on logo complexity: influencing luxury perception and purchase intention

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Introduction: This study provides branding guidance for fashion brands in the new economic landscape by examining how brand identity complexity influences luxury perception and purchase intention, particularly focusing on generational differences between Generation Z and Generation X.

Methods: Two experimental studies using self-reported questionnaires were conducted. Study 1 applied linear regression analysis to investigate the relationship between logo complexity, luxury perception, and purchase intention. Study 2 used hierarchical regression analysis to examine the moderating effect of generational differences on these relationships.

Results: Study 1 found that complex logos positively influenced purchase intention ($B = 0.533, p < 0.001$), with luxury perception partially mediating this effect ($B = 0.179, p < 0.001$). Study 2 revealed generational differences did not moderate the relationship between logo complexity and luxury perception but did significantly moderate the relationships between logo complexity and purchase intention, and between luxury perception and purchase intention ($\Delta R^2 = 0.008, p < 0.01; \Delta R^2 = 0.007, p < 0.01$).

Conclusion: The findings suggest emerging brands should consider adopting complex logos to enhance perceived value. Conversely, established brands may benefit more from reinforcing brand consistency and using subtle luxury cues. While perceived luxury remains stable across generations, tailored communication strategies—such as emphasizing innovation for Generation Z and craftsmanship for Generation X—could optimize brand alignment across different consumer segments.

KEYWORDS

brand identity, complexity, luxury perception, purchase intention, generational differences

1 Introduction

In the wake of prolonged economic uncertainty, the global luxury fashion industry faces mounting challenges. While markets in Europe and North America show signs of stagnation or decline, emerging economies—particularly China—continue to demonstrate resilient demand for high-end goods. According to [Bain and Company \(2024\)](#), despite a 2% global decline in luxury sales, affluent Chinese consumers remain a driving force, with top-tier buyers contributing disproportionately to global revenue growth. This divergence highlights a crucial imperative for luxury brands: to adjust their branding and communication strategies to meet the evolving expectations of consumers in increasingly fragmented markets. Recent data underscores this polarization. For instance, 80% of Chinese consumers reported perceiving a

shift toward downgrading after the COVID-19 pandemic, even as luxury segments like high-end fashion and automobiles continue to report robust sales growth driven by affluent buyers (D'Arpizio et al., 2024; McKinsey and Company, 2023). This divergence reflects a “K-shaped recovery,” where different consumer groups respond to economic fluctuations along opposing trajectories.

In response to this fragmented market, luxury brands have increasingly restructured their visual identity systems—most notably through logo simplification—to align with shifting consumer expectations in a digital-first environment. Prominent heritage brands such as Burberry, Balenciaga, and Saint Laurent have removed ornate or serif-based logotypes in favor of minimalist, sans-serif styles. This “branding” trend is not merely aesthetic but strategic: simplified logos ensure high legibility across media platforms and resonate with Gen Z's preference for modernity, subtlety, and authenticity (Lambert-Pandraud and Laurent, 2010; Shukla et al., 2023).

Despite this widespread move toward simplification, it remains unclear how variations in logo complexity affect consumers' perceptions of luxury and purchase intentions, particularly across different generational cohorts. Previous literature has emphasized the role of visual complexity in enhancing attention, perceived uniqueness, and brand differentiation (Pieters et al., 2010; Wu et al., 2024), but little is known about how this applies within the luxury domain or whether such effects are stable across demographic segments.

To address this gap, the present study investigates the cognitive and behavioral impact of logo complexity in the context of luxury fashion branding. Specifically, we examine how different levels of visual complexity affect consumers' perception of luxury and their willingness to purchase, while also testing whether generational differences moderate these effects, comparing Generation Z and Generation X consumers. By integrating visual design principles with consumer psychology and generational theory, this study makes a significant contribution to the branding and communication literature in two key ways. First, it offers empirical evidence on when and how visual complexity in logo design functions as a signal of luxury in a fragmented consumption environment. Second, it provides actionable insights for brand managers seeking to optimize identity systems under economic uncertainty and across diverse consumer segments.

2 Literature review and research hypotheses

2.1 Theoretical framework and conceptual foundations

2.1.1 SOR model

To better understand the psychological mechanism linking design stimuli to consumer behavior, this study adopts the Stimulus–Organism–Response (SOR) framework, proposed initially by Mehrabian and Russell (1974). The SOR model posits that environmental stimuli (S) elicit internal cognitive and emotional states (O), which in turn lead to behavioral responses (R). In marketing and design research, the SOR framework has been widely applied to explain how visual, symbolic, and informational cues influence consumers' perceptions, attitudes, and purchase intentions (Cakraputri et al., 2024; Jacoby, 2002). Recent applications of the SOR model in branding contexts have demonstrated its usefulness in

interpreting how design elements—such as product aesthetics, logo characteristics, or interface layout—act as stimuli that trigger consumer perceptions and drive decision-making (Hagtvedt and Patrick, 2008; Li et al., 2021).

Based on the model (Figure 1), the current study identifies logo complexity as the visual stimulus (S), luxury perception as the internal psychological response (O), and purchase intention as the behavioral outcome (R). Each of these core constructs will be further defined and reviewed in the following sections.

2.1.2 Logo complexity as a stimulus

Logo refers to various visual and typographic components. In this context, we use it to describe the visual design employed by a company, whether with or without its name, to define its identity or promote its products (Henderson and Cote, 1998). With the logo being a central element, it helps to differentiate companies. According to Hynes (2009), a triadic model has been developed to elucidate the interplay among color, design, and the evoked meanings of logos, as well as their significance in establishing a cohesive corporate image. Hynes's study employed a two-stage experimental design, wherein participants initially associated black and white logos with descriptive words and subsequently matched these logos with suitable colors. The findings revealed distinct preferences for particular combinations of color and design linked to perceived corporate attributes and identity. Building on this model, the current study employs a two-stage design to investigate how visual design features, such as logo complexity, affect consumer perception.

As noted by Gao et al. (2019), logos of globally recognized brands (e.g., Nike, Gucci, McDonald's) are already cognitively saturated; further manipulating their complexity yields minimal impact on brand equity. Hence, we deliberately select less known or newly established brands to avoid the constraint effect of brand familiarity.

Logo complexity, as a collative property, impacts the observer's perception and cognitive processing by representing the diversity and intricacy in the arrangement and quantity of elements within a scene (Berlyne, 1960). This complexity draws the observer's focus and stimulates the depth and breadth of cognitive processing, leading to a more engaged interpretation and understanding of visual information (Sun and Firestone, 2021). Despite these insights, existing research has yet to establish a unified or comprehensive framework for assessing logo complexity.

Most prior studies have either focused on general visual complexity or examined individual stylistic elements (e.g., symmetry, color use) in isolation. As a result, the concept of logo complexity remains under-theorized, lacking a robust multidimensional structure that reflects how consumers perceive and process logos in contemporary branding contexts. To address this gap, we conducted an integrative literature review across design studies, cognitive psychology, and branding research. Based on this review, we propose that logo complexity can be conceptualized across four key dimensions (Table 1): visual complexity, conceptual complexity, processing fluency, and design minimalism. Each dimension captures a distinct yet interrelated aspect of how a logo is visually structured, semantically interpreted, cognitively processed, and stylistically configured.

2.1.3 Luxury perception as organism

Consumer perception related research examines customers' beliefs, attitudes, and perceptions to determine how these factors affect their

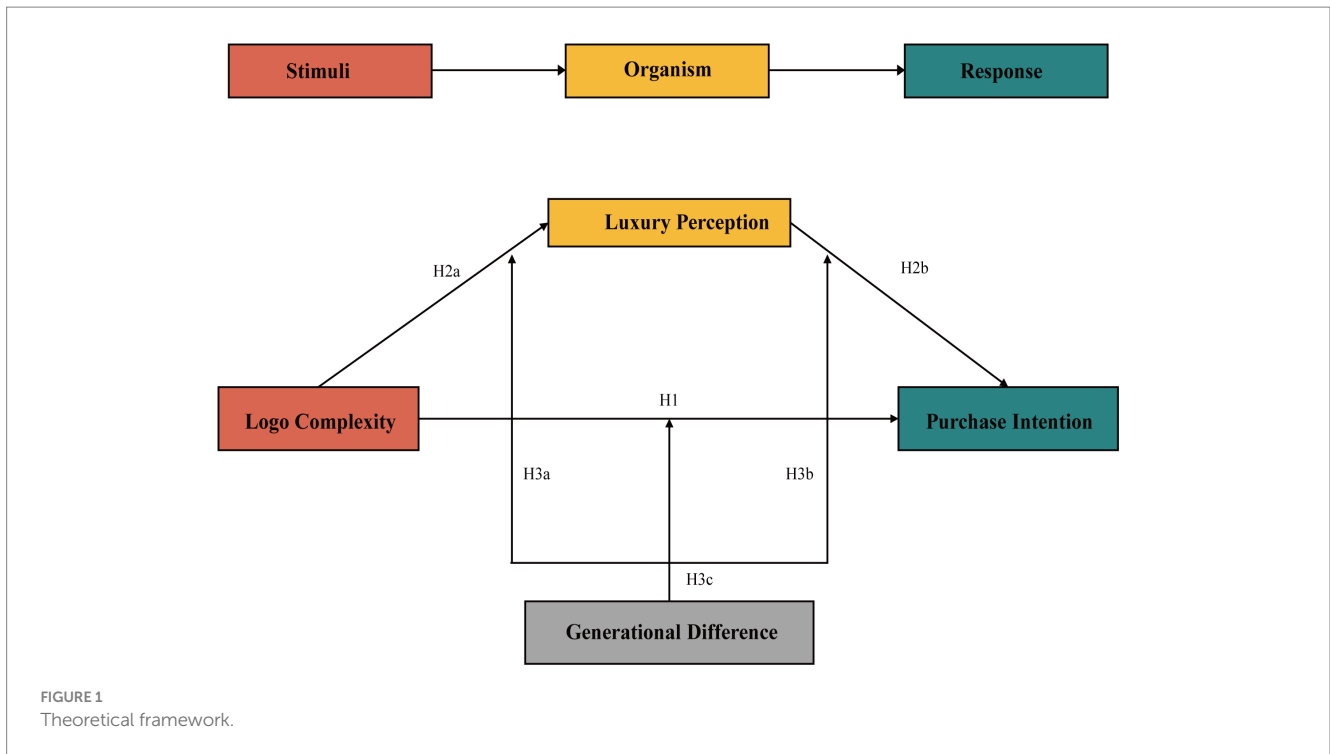


TABLE 1 Theories for logo complexity measurement.

Dimension category	Measurement dimensions	Key references
Visual complexity	• Element quantity	Henderson and Cote (1998), Pieters et al. (2010), and Rosenholtz et al. (2007)
	• Detail level	
	• Symmetry	
	• Color count	
	• Spatial layout complexity	
Conceptual complexity	• Polysemy	Janiszewski and Meyvis (2001), Miceli et al. (2014), and Orth and Malkewitz (2008)
	• Symbolism	
	• Cultural dependency	
Processing fluency	• Perceptual Fluency	Reber et al. (2004) and Winkielman et al. (2003)
	• Conceptual fluency	
Design minimalism	• Minimalist design	Clay (2024), Henderson and Cote (1998), and Samantha (2023)
	• Scalability	
	• Adaptability	

propensity to favor a particular brand over others or be willing to pay a premium (Foroudi et al., 2018). Prior research has shown that consumers' luxury perception of a brand is significantly shaped by visual design elements, including logos that signal particular brand attributes, for example, asymmetrical logos are found to elicit greater arousal and are perceived as more fitting for brands with exciting personalities, enhancing overall brand evaluations (Luffarelli et al., 2019). Similarly, logos with natural imagery or a diverse range of colors are processed more fluently and perceived as more authentic, trustworthy, or rich in product variety (Chen T. et al., 2023; Song et al., 2022), suggesting that logo features can symbolically shape consumers' high-level brand impressions.

Among such brand impressions, luxury perception is especially critical for symbolic and premium brands. Defined as a

multi-dimensional construct encompassing material excellence, aesthetic sophistication, and symbolic exclusivity (Heine and Phan, 2011), luxury perception has been widely measured across three main dimensions: objective (functional and tangible), subjective (individual feelings), and collective (social recognition) (Berthon et al., 2009). Vigneron and Johnson (2004) further conceptualize luxury along five interrelated components: conspicuousness, uniqueness, quality, hedonism, and extended self. These frameworks highlight that visual signal, such as logo design, may serve as entry points for triggering these luxury cues.

2.1.4 Purchase intention as response

Purchase intention (PI) represents a consumer's subjective likelihood to buy a specific product or service shortly, and is

considered a reliable proxy for actual purchasing behavior in marketing research (Ajzen, 1991; Morwitz, 2014). As a form of behavioral intention, PI has been extensively employed to evaluate marketing effectiveness, brand equity, and design decisions, especially when actual sales data is difficult to isolate from other variables (Dennhardt, 2014; Fishbein and Ajzen, 1975).

Recent studies emphasize the role of visual aesthetics and symbolic cues in shaping PI. For instance, Wu (2025) demonstrated that symmetrical brand logos significantly enhance consumers' perceived product quality, thereby increasing their PI. The study also highlighted the mediating role of perceived stability in this process.

In luxury branding contexts, PI is often influenced not only by product quality or functionality but also by perceived symbolic value, emotional appeal, and brand personality (Ko et al., 2019; Vigneron and Johnson, 2004). As such, PI becomes a key outcome variable for assessing whether visual identity elements successfully communicate exclusivity and desirability.

Recent bibliometric analyses underscore the centrality of purchase intention (PI) in branding and aesthetic research. Mohit et al. (2025) conducted a comprehensive review of 402 articles published between 1995 and 2024, revealing that PI remains a pivotal construct in studies exploring brand image and consumer behavior. Similarly, Wu et al. (2024) analyzed 2,116 publications from 1988 to 2024, identifying PI as a dominant theme, particularly within the framework of the Theory of Planned Behavior. These findings highlight PI's significance in capturing consumer responses to brand aesthetics and its predictive value in marketing strategies.

In this study, we examine how logo complexity, as a visual design cue, impacts consumers' PI through the mediating mechanism of luxury perception. By doing so, we extend the current understanding of how early-stage aesthetic exposure can shape downstream behavioral intentions—a critical pathway in brand communication strategy.

2.2 Hypotheses development

2.2.1 Direct effects: logo complexity and purchase intention

According to the SOR (Stimulus–Organism–Response) framework, visual design cues can act as environmental stimuli that elicit consumer responses in the form of behavioral intentions. Logo complexity, as a visual branding element, plays a critical role in shaping consumers' initial impressions and brand evaluations. Prior research has shown that aesthetically rich and elaborately designed logos can enhance cognitive engagement, elicit emotional resonance, and convey symbolic value, which together contribute to higher brand appeal (Berlyne, 1971; Hagtvedt and Patrick, 2008).

For instance, a systematic review by Liang et al. (2024) analyzed various logo design elements and concluded that complexity in logos significantly contributes to higher consumer engagement and purchase likelihood. Furthermore, research by Luffarelli et al. (2019) found that asymmetrical and complex logos are perceived as more exciting, which aligns with brands aiming to project a dynamic image, thereby influencing consumer preferences and purchase decisions. These findings suggest that logo complexity not only captures

consumer attention but also conveys brand attributes that resonate with consumer values and expectations.

In particular, visually complex logos may signal a greater investment in design and brand sophistication, leading consumers to infer product desirability and prestige. These inferences can positively influence their intention to purchase, especially in categories where symbolic consumption is valued. Therefore, we propose the following hypothesis:

H1: Compared to low-complexity logos, high-complexity logos positively affect purchase intention.

2.2.2 Mediation: the role of luxury perception

Previous research has emphasized the importance of luxury perception as a key determinant of consumer behavior in premium branding contexts. For instance, Lee et al. (2018) examined the role of visual complexity in the luxury fashion industry. They found that for less familiar brands, higher visual complexity in brand visuals significantly enhanced consumers' perception of luxury, which in turn positively influenced their purchase intention. This effect was attributed to the impression of design sophistication and uniqueness communicated through intricate visual elements. Conversely, low-complexity visuals were more effective for well-known brands, suggesting a boundary condition for the effect of complexity on perceived luxury.

Complementing these findings, Šola et al. (2025) employed a neuroscientific approach, including eye-tracking and EEG methods, to explore how design features in luxury retail logos affect consumer perception. Their results demonstrated that logos with higher visual stimulation, such as intricate forms and layered composition, generated stronger emotional engagement and greater perceived value. These logos not only attracted sustained attention but also conveyed a sense of prestige and exclusivity, reinforcing the brand's luxury positioning in the minds of consumers.

Building upon these insights, we posit that logo complexity can strengthen consumers' perception of a brand's luxury status. This heightened luxury perception, in turn, is expected to mediate the effect of logo complexity on consumers' purchase intention. Accordingly, the following hypotheses are proposed:

H2: Compared to low-complexity logos, high-complexity logos positively influenced the customer perception of luxury (H2a), thus increasing their purchase intention (H2b).

2.2.3 Moderation: generational differences as a boundary condition

Understanding generational cohorts provides a lens through which brands can better align visual strategies with consumer values. A generational cohort refers to a group of individuals born within the same historical period who share similar formative experiences, social environments, and value systems (Howe and Strauss, 1992; Schewe and Meredith, 2004). These shared experiences tend to produce relatively stable preferences in behavior, aesthetics, and consumption, making generational segmentation a valuable tool in marketing and design research.

Various generational segmentation approaches exist, including value orientation models (Inglehart, 1997), macro-historical divisions (Howe and Strauss, 1992), and time-period classifications used by

consulting firms such as BCG and McKinsey. Among these, time-based cohort models remain most applied in empirical research due to their simplicity and relevance to age-related differences in technological and economic exposure. In this study, we adopt a widely accepted classification that defines Generation Z as those born between 1995 and 2010, and Generation X as those born between 1965 and 1980 (Chen C. et al., 2023; Francis and Fernanda, 2018). These cohorts reflect markedly different socio-technological backgrounds and are thus likely to respond differently to brand cues, such as logo complexity.

While most generational frameworks originated in Western contexts, their applicability to non-Western markets such as China is increasingly supported by recent empirical findings. For instance, Kantar's report, 35 suggests that, despite cultural differences, Chinese generational cohorts—particularly Generation Z and Generation X—display distinct and predictable patterns in digital behavior, media preferences, and brand engagement. This is further supported by research on sustainable consumption behavior, which reveals significant intergenerational differences in the values, purchase motivations, and brand attitudes of Chinese consumers (Williams and Page, 2011). Therefore, adopting a generational perspective provides a valid and insightful framework for examining consumer responses to visual design cues in the Chinese market.

Several empirical studies have highlighted intergenerational differences in aesthetic and design preferences. For instance, Lin, and Bin (2011) found that adults rated visual illustrations significantly higher than adolescents across multiple aesthetic dimensions, except visual complexity, where adolescents showed more tolerance. Urbano et al. (2022) further demonstrated that older consumers prefer skeuomorphic design elements, perceiving them as more credible and aesthetically pleasing, while younger consumers exhibit a stronger preference for minimalist and modernist designs.

These findings suggest that generational differences may significantly moderate how consumers interpret visual brand stimuli, especially in contexts where symbolic value, craftsmanship, and perceived design investment are crucial, such as luxury branding. Theoretically, this assumption is supported by generational cohort theory (Mannheim, 1952), which emphasizes the role of formative socio-cultural environments in shaping enduring consumer values. From a practical standpoint, investigating generational differences allows brands to optimize visual communication strategies and tailor luxury positioning across age-based segments.

Accordingly, we hypothesize that generational cohort moderates the effect of logo complexity on both luxury perception and purchase intention. In this study, we focus specifically on Generation Z (born 1995–2010) and Generation X (born 1965–1980), as these two cohorts represent distinct contrasts in digital nativeness, design exposure, and consumption values. Generation Z has grown up in a minimalism-driven digital landscape, while Generation X matured during a pre-digital era that emphasized material craftsmanship and symbolic branding. These differences make the two groups particularly relevant for examining how logo complexity is interpreted in the context of luxury branding. This leads to the following hypotheses:

H3a: Generational differences moderate the impact of logo complexity on the perception of luxury.

H3b: Generational differences moderate the impact of luxury perception on purchase intention.

H3c: Generational differences moderate the impact of logo complexity on purchase intention.

3 Method

3.1 Research design

This study investigates how the complexity of fashion brand logos influences consumer perceptions of luxury and their purchase intentions, and whether this relationship is moderated by generational cohort.

To empirically examine these relationships, a structured experimental approach is necessary to control for visual complexity and isolate the effects of generational segmentation. Thus, we employed a two-phase experimental design consisting of a pre-test and a main experiment (Table 2).

3.2 Pre-test

A pre-test was conducted to identify visual stimuli that varied significantly in perceived logo complexity while ensuring minimal brand familiarity among participants. This step aimed to establish a robust foundation for the main experiment by controlling for pre-existing brand associations and ensuring that any observed effects could be attributed to logo design characteristics rather than brand knowledge.

Considering constraint effects—where changes in logos of widely known brands have limited impact on brand equity—we selected logos from 30 fashion brands that were either unknown in the Chinese market or had entered the market within the last decade. Prior research has suggested that utilizing relatively unfamiliar or recently introduced brands helps control pre-existing brand associations and ensures clearer experimental manipulation (Labrecque and Milne, 2012; Müller et al., 2013). To ensure significant perceptual differences among experimental stimuli, five domain experts were recruited to independently evaluate these 30 logos across four theoretically derived dimensions of complexity using a seven-point Likert scale (1 = strongly disagree, 7 = strongly agree). The dimensions evaluated were Visual Complexity, Conceptual Complexity, Processing Fluency (reverse-coded), and Design Minimalism (reverse-coded). Each logo received an average complexity score derived from these four dimensions, referred to as the “Total Complexity Score.”

Following extreme groups sampling (Reber et al., 2004), the three most and least complex logos were selected to enhance perceptual contrast and improve experimental sensitivity. This method was intended to maximize perceptual differences among stimuli, thereby enhancing the validity and sensitivity of the subsequent experimental manipulations.

3.3 Main experiment

In the main experiment, we employed an online questionnaire survey method. Participants were randomly assigned to one of two

TABLE 2 Experiments description.

Experiment	Description	Validation
Pre-experiment	Visual stimuli selection	Control group vs. Experimental group
	Questionnaire reliability test	Questionnaire
	Manipulation check	Experiment effectiveness
Experiment 1	Variables: logo complexity, purchase intention, luxury perception	H1: Compared to low-complexity logos, high-complexity logos positively affect purchase intention.
	Experiment material: simple or complex brand logo	
	Exposure time: 30s for each set, 3 sets for each participant	H2: Compared to low-complexity logos, high-complexity logos positively influenced the customer perception of luxury (H2a), thus increasing their purchase intention (H2b).
	Record: participants self-reported through questionnaires	
Experiment 2	Variables: logo complexity, purchase intention, luxury perception, generational difference	H3a: Generational differences moderate the impact of logo complexity on the perception of luxury.
	Experiment material: simple or complex brand logo	H3b: Generational differences moderate the impact of luxury perception on purchase intention.
	Exposure time: 30s for each set, 1 set for each participant	H3c: Generational differences moderate the impact of logo complexity on purchase intention.
	Participant Sampling: generation X, generation Z	
	Record: participants self-reported through questionnaires	

conditions: high complexity and low complexity. Each condition contained three representative logos selected from the pre-test phase. To mitigate measurement error and improve reliability, each participant evaluated each logo individually and repeated the complexity assessment three times.

However, repeated exposure to identical stimuli may lead consumers to experience perceptual saturation, where positive affect diminishes over time (Buechel and Townsend, 2018; Janiszewski and Meyvis, 2001). To address this issue, stimulus exposure duration was carefully controlled. Specifically, each logo was displayed for only 30 s before participants were prompted to answer the subsequent evaluation questions. This design decision was intended to isolate the complexity effects while minimizing potential saturation and fatigue biases.

3.4 Measures

This study measured three key constructs: logo complexity (independent variable), luxury perception (mediating variable), and purchase intention (dependent variable). All latent variables (luxury perception and purchase intention) were assessed using multi-item scales adapted from established literature.

Logo Complexity was manipulated through a stimulus-based experimental design. Participants were randomly exposed to either a high-complexity or low-complexity logo, as pre-validated by expert ratings in the pre-test phase. Thus, this variable was treated as a binary experimental condition.

Luxury Perception was measured using a five-item scale adapted from Vigneron and Johnson (2004) and Heine and Phan (2011), which covered price, quality, scarcity, symbolic meaning, and user exclusivity. All items were rated on a 7-point Likert scale (1 = Strongly Disagree, 7 = Strongly Agree). After item purification based on factor loadings (< 0.5), the remaining five items demonstrated good reliability and validity (Cronbach's $\alpha = 0.843$, CR = 0.879, AVE = 0.598).

Purchase Intention was measured using a four-item scale adapted from Taylor and Baker (1994) and Lu et al. (2014). These items assessed participants' willingness and likelihood to purchase the brand. The scale showed high internal consistency (Cronbach's

$\alpha = 0.880$), good composite reliability (CR = 0.924), and satisfactory average variance extracted (AVE = 0.754).

A total of 220 valid responses were collected. Following confirmatory factor analysis (CFA), four items with factor loadings below 0.5 were excluded from the final model (Table 3).

Additionally, an independent samples t-test was conducted to verify the efficacy of the experimental manipulation regarding logo complexity. The test compared the mean complexity scores between two stimulus groups: Control Group (lower complexity) and Experimental Group (higher complexity). The results revealed a statistically significant difference in the perceived complexity scores between Control Group (M = 60.70, SD = 18.02, N = 57) and Experimental Group (M = 73.45, SD = 17.12, N = 63); $t(118) = -3.975$, $p < 0.001$. The 95% confidence interval for the mean difference ranged from -19.11 to -6.40, indicating a substantial effect of the manipulation. These findings confirm that the manipulation of logo complexity was successful, as participants perceived a significant difference in complexity between the two conditions.

3.5 Sampling and data analysis method

3.5.1 Sampling method

To ensure both contextual relevance and methodological rigor, this study adopted a multi-stage sampling strategy tailored to the specific objectives of each research phase. Such a flexible approach is often employed in consumer research where representative sampling is constrained by feasibility (Etikan, 2016; Hair et al., 2014).

During the pre-test phase, we used convenience sampling to recruit 100 passersby on the street, who were asked to rate the visual complexity of 30 logos. This method enabled rapid stimulus categorization based on perceived complexity levels (Sedgwick, 2013). While the approach carries randomness, it lacks professional assessment. To ensure that the stimuli reflected both public perception and design expertise, purposive sampling was additionally employed to involve 30 professional designers with over five years of experience in categorizing logos (Tongco, 2007).

TABLE 3 Construct questionnaire measure item with factor loading.

Factor	Measure items		Factor loadings	Source
Logo complexity	High complexity logo vs. low complexity logo			Virus Sources (Table 1)
Luxury perception	LP1	I think the products of this brand will be very expensive	0.994	Vigneron and Johnson (2004) and Heine and Phan (2011)
	LP2	I think this brand's products will be very scarce	0.658	
	LP3	I think the quality of this brand's products will be very good	0.639	
	LP4	I think this brand's products symbolize high taste	0.722	
	LP5	I think this brand is suitable for high-income classes to use.	0.801	
Purchase intention	PI1	I would consider buying this product.	0.731	Taylor and Baker (1994) and Lu et al. (2014)
	PI2	It is possible that I would buy this brand's product	0.896	
	PI3	I will choose this brand without hesitate when I need this product.	0.909	
	PI4	Even I am not in need, I would buy this product.	0.924	

In the main experiment, voluntary response sampling was employed for distributing the online questionnaire. This method increased recruitment efficiency, though it may have introduced self-selection bias, as participants with a strong interest in branding or fashion might be overrepresented (Lavrakas, 2008).

To control for generational variance, stratified sampling was employed to obtain 100 valid responses each from Generation Z (born 1995–2010) and Generation X (born 1965–1980). The generational cohort definitions were based on widely cited studies in marketing and psychology (Brosdahl and Carpenter, 2011; Twenge, 2010).

Finally, during the experimental procedure, all participants were assigned to either the Simple logo or the Complex logo group using simple random assignment. This method effectively minimized potential confounding variables and enhanced the internal validity required for causal inference (Campbell and Stanley, 2015).

3.5.2 Data analysis method

Similarly, several data analysis methods were employed to ensure the robustness and reliability of the findings. Each technique was selected based on its relevance to different stages of the research process, ranging from the pre-test phase to hypothesis testing.

Reliability analysis (Cronbach's alpha) was conducted to assess the internal consistency of the logo complexity evaluations and all questionnaire-based scales. Construct validity was examined through exploratory factor analysis (EFA) and confirmatory factor analysis (CFA), including composite reliability (CR) and average variance extracted (AVE). Descriptive statistics were used to summarize participant demographics and distributions of key variables. An independent samples t-test was performed to evaluate the effectiveness of the experimental manipulation by comparing perceived complexity between the high and low complexity logo groups.

To examine the core relationships, simple linear regression was used to assess the direct effect of logo complexity on purchase intention. Subsequently, multiple regression and mediation analysis were conducted following the procedures outlined by Baron and Kenny (1986) with additional validation through Sobel tests and bootstrap analysis (Preacher and Hayes, 2008) to assess the mediating role of luxury perception. Pearson correlation analysis was used to examine the linear relationships among all key constructs. Finally, hierarchical regression analysis was applied to test the moderating effect of generational differences, following the methodological guidance of Aiken et al. (1991).

4 Result

4.1 Pre-test

To ensure the appropriateness of logo stimuli used in the main study, a pre-test was conducted to validate the perceived complexity of 30 candidate logos. Based on a multidimensional theoretical framework, a 12-item expert evaluation scale was constructed to capture four key dimensions of logo complexity: visual complexity, conceptual complexity, processing fluency (reverse-coded), and design minimalism. Each dimension was represented by 2 to 4 items, as detailed in Table 1 (Section 2.2).

A total of five domain experts were recruited to independently evaluate each logo using the 7-point Likert scale (1 = Strongly Disagree, 7 = Strongly Agree). The internal consistency of the scale was evaluated using Cronbach's alpha across all 12 items. Results demonstrated excellent reliability ($\alpha = 0.980$), indicating high agreement among expert ratings and strong cohesion among the measurement items. Table 4 shows the overall and subscale reliability analysis results, which further confirm this consistency. These findings validate the structural soundness of the scale and confirm that the selected logos exhibited adequate variation in perceived complexity.

Based on the expert evaluations, three brand logos with the highest perceived complexity were selected for the high-complexity condition. These logos featured intricate visual elements, such as ornate emblems, detailed illustrations, and layered textual content, contributing to their low processing fluency and symbolic richness. Their mean complexity scores ranged from 5.87 to 6.47. In contrast, the low-complexity group included three logos characterized by minimalistic, geometric, and highly recognizable designs, which yielded significantly lower complexity ratings—averaging around 1.05. These two sets of logos were used as visual stimuli in the experimental design to represent high and low complexity conditions, respectively.

4.2 Descriptive analysis

Prior to the main analysis, this study presents the demographic characteristics of participants from both experiments (Table 5). Data collection was conducted in December 2023 via an online survey platform. To ensure data quality, respondents received a monetary incentive ranging from 3 to 5 RMB for completing the questionnaire.

TABLE 4 Cronbach's alpha for logo complexity measurement.

Dimension	Number of items	Cronbach's α
Visual complexity	4	0.908
Conceptual complexity	3	0.954
Processing fluency	2	0.973
Design minimalism	3	0.94
Overall (total)	12	0.98

Additionally, a minimum completion time threshold (no less than 2 min for each page) was set to filter out invalid or inattentive responses. Only fully completed questionnaires that passed logical checks were retained for analysis.

In Experiment 1, 120 valid responses were collected, with a relatively balanced gender distribution (52.5% male and 47.5% female). The majority of participants were aged between 20 and 24 years (63.3%), followed by those aged 25–29 years (18.3%). Regarding monthly income, 64.2% reported earning less than 5,000 RMB per month. In terms of education, over 70% of the participants held a bachelor's degree or higher. Concerning fashion product consumption, 58.3% had made 1–4 purchases in the past three months, while 15.8% reported more than 10 purchases.

In Experiment 2, 227 valid responses were obtained, with a gender distribution of 46.3% male and 53.7% female. Participants were categorized into generational cohorts based on their reported age: 51.6% belonged to Generation Z (born between 1995 and 2010), and 45.8% to Generation X (born between 1965 and 1980), following the classification by Francis and Fernanda (2018). The income distribution was more diverse, with 44.5% earning less than 5,000 RMB monthly, and 34.8% in the 5,000–9,999 RMB range. Education levels were relatively high, with 62.6% holding a bachelor's degree and 15% possessing a postgraduate qualification. Fashion purchase frequency was consistent with the previous sample: 60.4% reported buying fashion products 1–4 times in the past three months, while 9.3% exceeded 10 purchases.

It is noteworthy that this study adopts “fashion products” as a broad term encompassing clothing, footwear, accessories, and bags related to personal image construction. In existing literature, luxury goods are considered a high-end subcategory within the fashion industry, characterized by high prices, scarcity, and symbolic value (Kapferer and Bastien, 2012; Okonkwo, 2007). Therefore, in this study, luxury goods are conceptualized as a subset of fashion products, and this definition was provided on the first page of the questionnaire to ensure a consistent understanding among participants.

4.3 Experiment 1

Through the mediating effect analysis process, we generate three regression models to test hypotheses 1 and 2, with supplementary confirmation from the Sobel test and the bootstrap test (Table 6).

Model 1 reveals that logo complexity significantly enhances purchase intention ($B = 0.533, p < 0.001$), establishing a direct and positive correlation. The regression formula succinctly encapsulates this relationship: $Y = 0.533X + \epsilon$, where Y denotes purchase

willingness and X represents complexity. Here, the coefficient 0.533 implies that a one-unit increase in complexity results in a 0.533-unit increase in purchase intention, all else being equal.

Turning to Model 2, the analysis indicates a substantial positive impact of complexity on luxury perception ($B = 0.519, p < 0.001$). This suggests that greater logo complexity intensifies the luxury perception, as reflected in the regression equation: $M = 0.519X + \epsilon$. Accordingly, for every unit increase in complexity, there is a corresponding 0.519 unit rise in perceived luxury, other factors being constant.

The results from model 3 indicate that the direct effect of logo complexity on purchase intention is significant ($B = 0.179, p < 0.001$), but this effect diminishes after introducing luxury perception as a mediator. Additionally, luxury perception has a significant impact on purchase intention ($B = 0.683, p < 0.001$), indicating that luxury perception partially mediates the effect of logo complexity on purchase intention.

Furthermore, the Sobel test ($Z = 5.537, p < 0.001$) and Bootstrap confidence intervals (LLCI = 0.218, ULCI = 0.527) robustly affirm luxury perception's role as a significant mediator. Therefore, the evidence from Models 1, 2, and 3, alongside the Sobel test and Bootstrap analysis, strongly validates the proposed H1 and H2, underscoring luxury perception as a partial mediating variable between logo complexity and consumer purchase intention.

4.4 Experiment 2

4.4.1 Correlation analysis

The correlation matrix (Figure 2) provides insights into the linear relationships among the variables. These data reveal intricate dynamics between logo complexity, luxury perception, and consumer purchase intention. Specifically, a statistically significant positive correlation ($r = 0.52, p < 0.01$) between complexity and luxury perception indicates that consumers tend to associate more complex products with higher luxury, suggesting that complexity may enhance a product's luxurious appeal. Similarly, the positive correlation between complexity and purchase intention ($r = 0.43, p < 0.01$) suggests that increased complexity may bolster the intention to purchase, potentially due to perceived quality or exclusivity associated with such products. Moreover, the strong positive correlation between luxury perception and purchase intention ($r = 0.71, p < 0.01$) underscores the substantial influence of luxury perception on consumer behavior, reinforcing the concept that the perception of luxury is a significant motivator for purchase decisions. However, the data suggests that generational differences do not significantly impact the relationships among perceived complexity, luxury, or purchase intentions, indicating that the relationship between generational differences and the model should be further analyzed.

4.4.2 Hierarchical regression analysis

Hierarchical regression analysis (Table 7) provides valuable insights into the impact of various moderating variables on customer behavior. We have observed a significant change in Model 1, where we investigate how the difference in generations impacts the relationship between complexity and the desire to purchase. At first, the model accounts for a significant 70.4% of the variation in purchase intention. When an interaction variable is included, the explanatory

TABLE 5 Descriptive data for experiment 1 and 2.

Descriptive statistics of respondent characteristics		Experiment 1		Experiment 2	
Demographic variable		Sample size	%	Sample size	%
Gender	Male	63	52.5%	105	46.3%
	Female	57	47.5%	122	53.7%
Age	14 ~ 19	17	14.2%	116(G-Z)	51.6%
	20 ~ 24	76	63.3%		
	25 ~ 29	22	18.3%		
	>30	5	4.2%	103 (G-X)	45.8%
Income level (per month)	less than 5,000 RMB	77	64.2%	101	44.5%
	5,000 RMB ~ 9,999 RMB	24	20.0%	79	34.8%
	10,000 RMB ~ 19,999 RMB	9	7.5%	30	13.2%
	20,000 RMB ~ 29,999 RMB	4	3.3%	9	4.0%
	More than 30,000 RMB	6	5.0%	8	3.5%
Education level	Middle School and Below	2	1.7%	9	4.0%
	High School or Vocational School	3	2.5%	17	7.5%
	Associate degree	7	5.8%	25	11.0%
	Bachelor's degree	86	71.7%	142	62.6%
	Postgraduate level and above	22	18.3%	34	15.0%
Fashion product purchase frequency (past 3 months)	None	5	4.2%	20	8.8%
	1-4 times	70	58.3%	137	60.4%
	5-9 times	26	21.7%	49	21.6%
	More than 10 times	19	15.8%	21	9.3%

TABLE 6 Results of mediate effect analysis using a process plugin in SPSS.

Model	Model 1		Model 2		Model 3	
Dependent variable	Y = purchase intention		M = luxury perception		Y = purchase intention	
	B	SE	B	SE	B	SE
X = complexity	0.533***	0.078	0.519***	0.079	0.179***	0.066
M = luxury Perception	-	-	-	-	0.683***	0.066
F	46.871***		43.467***		97.598***	
R ²	0.284		0.269		0.625	
Sobel test	Indirect effect = 0.354, Z = 5.537***					
Bootstrap	Indirect effect		BootLLCI		BootULCI	
	0.354		0.218		0.527	

***indicates significance at 0.001 level.

power increases to 71.2%, with a slight change of 0.008 percentage points. The observed increase, albeit small, is statistically significant (Int. Sig. = 0.012), indicating that the connection between complexity and purchase intention is influenced by an extra variable, most likely age, in this particular situation.

On the other hand, Model 2, which examines how generational differences impact the relationship between complexity and luxury perception, does not reveal any such alteration. The explanatory power stays consistent both before and after the inclusion of the interaction term, suggesting that the moderator does not have a substantial impact on the connection between complexity and luxury perception.

When we shift our attention to Model 3, which examines how age variations affect the connection between luxury perception and purchase intention, we can see a significant statistical improvement. The model's ability to explain the variation in purchase intention increases from 79.3% to a reliable 80.0% after including the interaction term, which is a statistically significant improvement (Interaction Significance = 0.005). This suggests that the perception of luxury's influence on purchasing desire is significantly shaped by generational shifts, aligning with the findings in Model 1.

Consequently, we accept the hypotheses H3b and H3c, which suggest that generational differences significantly enhance the impact

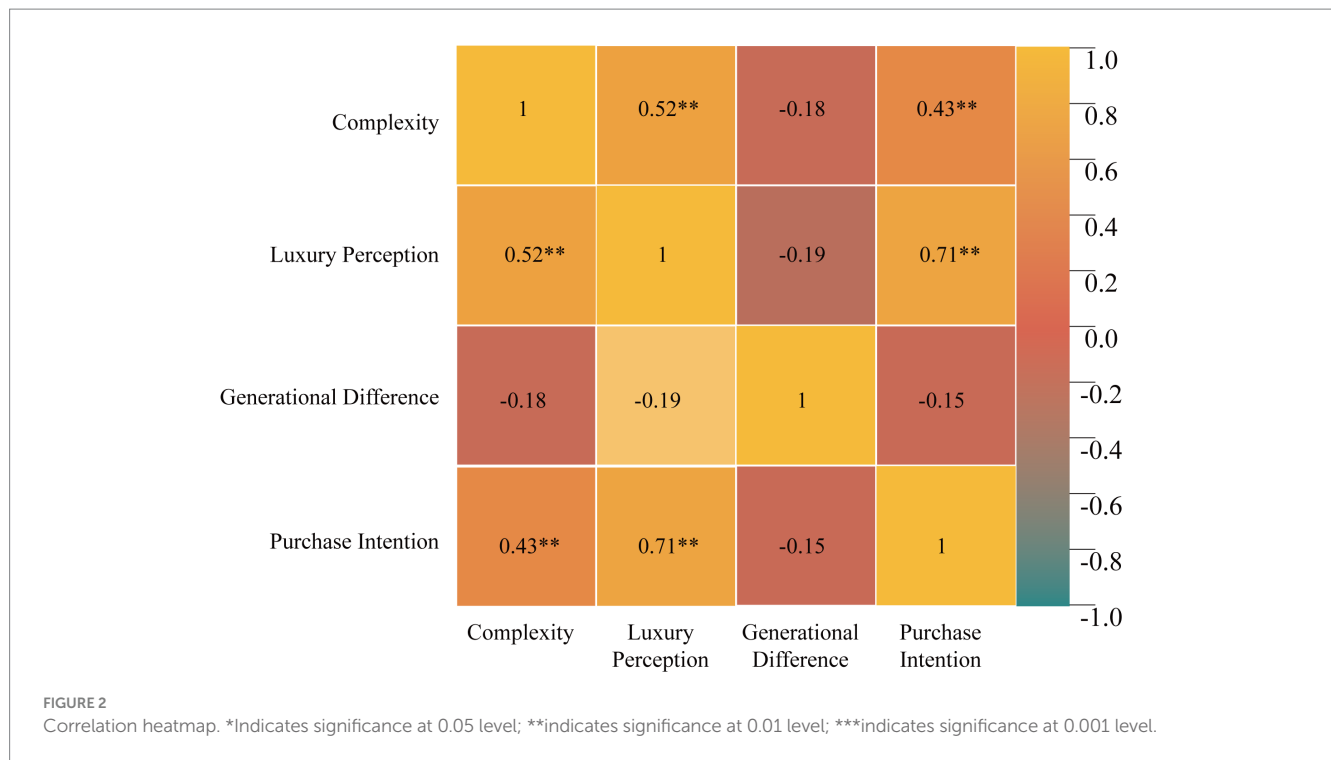


TABLE 7 Testing for moderation effects by using the hierarchical regression in SPSS.

Model	Status	Regression	R ²	ΔR ²	Int. sig.
1	Before	Y = 1.424Z + 0.064X + 45.652	0.704		
	After	Y = 1.412Z + 0.062X - 0.003Int + 45.206	0.712	0.008	0.012*
2	Before	Y = -0.074Z + 0.099X + 51.813	0.274		
	After	Y = -0.075Z + 0.099X - 0.000Int + 51.777	0.274	0.000	0.807
3	Before	Y = 1.475Z + 0.664X + 45.650	0.793		
	After	Y = 1.465Z + 0.656X - 0.003Int + 45.23	0.800	0.007	0.005**

*Indicates significance at 0.05 level; **indicates significance at 0.01 level.

of luxury perception and purchase intention, thereby improving the influence of logo complexity on purchase intention. However, this mediating effect invalidates the relationship between logo complexity and luxury perception due to the non-significant interaction value.

5 Discussion

Table 8 summarizes the verification results and statistical significance levels of all hypotheses proposed during our research process. In this section, we will discuss these results one by one.

5.1 Visual complexity as one of the drivers of branding

The significant acceptance of Hypothesis 1 confirms that high-complexity logos are more effective in enhancing consumer purchase intentions compared to low-complexity logos. This aligns with prior findings indicating that visual complexity, characterized by a higher density of design elements, captures greater consumer attention,

stimulates deeper cognitive processing, and enhances memorability (Bresciani and Del Ponte, 2017; De Marchis et al., 2018). According to the fluency processing theory, visually complex logos require consumers to invest more cognitive resources in interpreting and processing visual information, consequently enhancing consumers' involvement and interest in the brand (Pieters et al., 2010; Reber et al., 2004). Furthermore, the aesthetic preference theory also suggests that moderate visual complexity can be perceived as more attractive because it satisfies consumers' intrinsic need for novelty and visual stimulation, promoting positive brand evaluations and higher purchase intentions (Berlyne, 1971; Henderson and Cote, 1998). This also aligns with the experiential branding perspective, where visual complexity contributes to richer sensory engagement and emotional connection (Schmitt, 1999).

This positive effect is particularly pronounced for newly established or lesser-known brands, as their logos often serve as initial visual touchpoints to convey brand identity, capture consumer attention, and foster initial brand impressions (Wang et al., 2018). Conversely, the effectiveness of increasing visual complexity is significantly diminished for well-established brands due to the existing familiarity and stable expectations from consumers. As Gao et al. (2019) pointed out in the concept of "The Constraint Effect of Brand Value," mature brands

derive less incremental benefit from logo modifications, as their brand equity is strongly tied to pre-existing consumer knowledge and experiences, rather than visual novelty alone.

Therefore, while high-complexity logos represent a potent strategic tool for differentiating new entrants in competitive markets, established brands must approach logo complexity modifications cautiously, recognizing the limited incremental impact on their existing consumer base.

5.2 Luxury perception bridges visual cues and purchase intention

The results support Hypothesis 2, demonstrating that luxury perception serves as a partial mediator between logo complexity and purchase intention. Specifically, the direct effect of logo complexity on purchase intention remains significant ($B = 0.179, p < 0.001$) but is reduced after introducing luxury perception into the model. Meanwhile, luxury perception significantly predicts purchase intention ($B = 0.683, p < 0.001$), indicating a partial mediation effect.

This finding reveals that high-complexity logos not only influence purchase intention directly but also indirectly by activating perceptions of luxury. Such activation of perceived luxury may be reinforced in both traditional and digital environments, where visual structures, symbolic features, and interactivity jointly shape emotional responses and brand evaluations (He et al., 2022; Sundar and Kim, 2005). Given that our luxury perception scale captures multidimensional cues—including expensiveness, scarcity, quality, symbolic taste, and social exclusivity—the partial mediation suggests that complexity is capable of evoking a broad spectrum of luxury-related associations. This supports prior research indicating that consumers rely on visual cues such as design intricacy and symbolic depth to infer a brand's luxury positioning (Kim and Ko, 2010; Lee et al., 2018).

However, it is important to note that this mediation is only partial. This implies that the influence of logo complexity on purchase intention does not rely solely on luxury perception, but may also operate through other psychological mechanisms such as emotional engagement, perceived innovativeness, or aesthetic pleasure—all of which warrant future empirical investigation (Hagtvedt and Patrick, 2008; Orth and Malkewitz, 2008; Reber et al., 2004). These alternative pathways suggest that complex logos might evoke affective or experiential responses beyond their symbolic association with luxury.

That said, visual complexity in logos may not always lead to positive outcomes. In particular consumer contexts, complex logo designs could be perceived as visually overwhelming, inaccessible, or lacking clarity, thereby weakening their effectiveness. Although most prior research has

emphasized the positive association between complexity and prestige, limited attention has been given to the potential downsides of logo complexity. Recent studies suggest that while complex logos can initially attract attention, repeated exposures may lead to decreased perceptual fluency and reduced positive evaluations (Miceli et al., 2014). Furthermore, consumer traits such as need for cognition and product involvement may moderate these effects, indicating that the impact of logo complexity is contingent upon individual differences and contextual factors (Orth and Malkewitz, 2008). Future research should clarify the boundary conditions under which logo complexity is beneficial or detrimental, potentially moderated by consumer traits (e.g., need for cognition, product involvement) or contextual features (e.g., brand familiarity, visual competition in the environment) (Cacioppo et al., 1983; Campbell and Keller, 2003; Janiszewski and Meyvis, 2001; Zaichkowsky, 1985).

5.3 Generational values shape the interpretation of complexity

Our findings confirmed Hypotheses H3b and H3c, showing that generational differences significantly moderate the effects of both logo complexity and luxury perception on purchase intention. However, the rejection of H3a—indicating no significant moderation of generational differences on the relationship between logo complexity and luxury perception—offers a nuanced insight: although the perceptual link between visual complexity and luxury is consistent across generations, the translation of this perception into actual behavioral intention (i.e., purchase) is generation-dependent.

This pattern underscores the robustness of luxury perception as a symbolic reading of visual cues, but also highlights how value systems, media literacy, and consumption goals differ by age cohort, shaping how that perception informs decision-making. For example, digital-native generations such as Gen Z may be more visually literate and inclined to associate complex logos with innovation, social status, or brand uniqueness—attributes often valued for identity signaling in peer-driven networks (Djafarova and Bowes, 2021; Williams and Page, 2011). In contrast, older generations may interpret complexity through lenses of craftsmanship, heritage, or prestige, favoring logos that evoke stability and brand maturity (Bossel et al., 2019; Cole et al., 2008).

These findings have both theoretical and practical implications. Theoretically, they support generational segmentation not only in terms of content preference but in visual processing strategies and interpretive frameworks. This resonates with socio-cultural theories of generational identity formation (Bakewell and Mitchell, 2003; Mannheim, 1952), suggesting that consumers' visual decoding is

TABLE 8 Hypothesis result overview.

No.	Sig. level	Content	Result
H1	***	H1: Compared to low-complexity logos, high-complexity logos positively affect purchase intention.	ACCEPTED
H2	***	H2: Compared to low-complexity logos, high-complexity logos positively influenced the customer perception of luxury (H2a), thus increasing their purchase intention (H2b).	ACCEPTED
H3A	/	H3a: Generational differences moderate the impact of logo complexity on the perception of luxury.	REJECTED
H3B	**	H3b: Generational differences moderate the impact of luxury perception on purchase intention.	ACCEPTED
H3C	**	H3c: Generational differences moderate the impact of logo complexity on purchase intention.	ACCEPTED

indicates significance at 0.01 level; *indicates significance at 0.001 level.

filtered through shared formative experiences, such as media environments, brand exposure, and luxury definitions, which differ sharply across generations.

Practically, this suggests that brands may not need to redesign their logos for different generational cohorts to evoke a sense of luxury, especially given the consistent relationship between logo complexity and luxury perception across age groups. However, since the influence of luxury perception and logo complexity on purchase intention varies by generation, marketers should consider tailoring brand positioning and value emphasis to align with generational expectations and consumption logic.

Future research should investigate the underlying mechanisms that drive this moderation effect, such as differences in visual attention allocation, brand schema accessibility, or digital consumption habits. Moreover, integrating eye-tracking or neuro-aesthetic methods could provide more direct evidence of how different generations process and respond to logo complexity across platforms and contexts.

5.4 Theoretical implications

This study makes significant contributions to the theoretical advancement of visual branding and consumer psychology in several key ways.

- By situating logo complexity within the SOR framework, the study extends our understanding of how visual stimuli—specifically the structural intricacy of logos—serve as symbolic cues that influence internal cognitive and emotional evaluations (Henderson and Cote, 1998; Pieters et al., 2010). This enriches prior research that has focused primarily on aesthetic preference by linking complexity to brand-related symbolic value (Childers and Jass, 2002).
- The confirmation of luxury perception as a mediating mechanism advances the conceptualization of “organism” processes within SOR framework, demonstrating how consumers’ interpretations of visual complexity are channeled through perceptions of exclusivity and status before affecting behavioral intentions (Kapferer and Bastien, 2012; Ko et al., 2019). This mediation pathway highlights how the visual structure of brand logos can serve not only perceptual but also evaluative functions in the construction of luxury experiences (Bian and Forsythe, 2012).
- The integration of generational cohort as a moderating variable fills a notable gap in the literature on age-related differences in visual processing. While previous studies have explored generational segmentation consumer behavior (Bakewell and Mitchell, 2003; Parment, 2013), few have addressed how generationally shaped cognitive schemas affect the decoding of visual brand cues in branding. This study demonstrates that logo complexity is not interpreted uniformly across age groups, aligning with intergenerational differences in visual attention and interpretive strategies (Moore and Carpenter, 2008).
- By grounding the analysis in a Chinese consumer context, the study contributes to cross-cultural branding theory. Prior research has noted that cultural schemas shape both the reception of visual cues and luxury evaluation standards (Wang et al., 2018; Zhang and Shavitt, 2003). Moreover, recent industry reports (e.g., Kantar, 2021) suggest that generational distinctions in consumer behavior are increasingly evident in China, especially among Gen Z and Gen X. Thus, adopting a generational lens within a

non-Western market not only enhances the cultural validity of visual branding theories but also responds to calls for more inclusive and globalized consumer models.

5.5 Practical implications

Through our discussion, we have the following recommendations for brand logo design and marketing strategies in the fashion industry:

- For emerging or less-established brands, adopting high-complexity logos is recommended to boost initial attention, perceived uniqueness, and purchase intention. In contrast, well-known brands may gain limited incremental benefits from increasing visual complexity and should instead prioritize brand consistency.
- Strategically apply logo complexity to enhance perceived luxury, such as through detailed elements or layered visual presentation. Since complexity may trigger diverse cognitive responses among consumers, pre-testing logo effectiveness in conveying premium brand value is essential before implementation.
- There is no need to redesign logos for different generational cohorts, as luxury perception triggered by logo complexity remains stable across age groups. However, brands should tailor downstream communication strategies—including message framing and value emphasis—to align with distinct generational motivations and aesthetic preferences.

6 Limitations

While this study provides valuable insights into logo complexity and consumer behavior, several limitations must be acknowledged.

First, our research focuses solely on Chinese consumers in the fashion industry. Although this cultural context offers depth and relevance, it may limit the generalizability of the findings to other regions or sectors. Aesthetic interpretation and luxury perception are known to vary across cultures (Hofstede, 1984; Zhang and Shavitt, 2003). Future studies should conduct cross-cultural comparisons, particularly between Eastern and Western consumers, to explore whether similar cognitive and emotional responses to logo complexity persist across cultural boundaries.

Second, the experimental design employed static logo stimuli with fixed exposure times, which may not reflect real-world brand experiences. In today’s branding environment, consumer interaction with logos occurs through dynamic and interactive formats across various platforms, including social media, websites, and augmented reality (Šola et al., 2025). This limitation in ecological validity suggests a need for future studies to examine logo complexity within immersive and digitally rich environments.

Third, while our generational comparison between Gen X and Gen Z revealed important differences in how logo complexity and luxury perception influence purchase intention, it represents only one form of consumer segmentation. Other individual factors, such as visual literacy, professional design background, or digital familiarity, may also influence how consumers process complex visual stimuli (Parment, 2013). These factors were not controlled for in our study and should be considered in future research.

Finally, the study relied on self-reported measures collected through traditional survey methods. Although statistically reliable, such methods

are subject to recall bias and social desirability effects. Future studies could benefit from incorporating advanced tools, such as eye-tracking or neuro-aesthetic measures, to obtain more objective results.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

Ethical approval was not required for the studies involving humans. The studies were conducted in accordance with the local legislation and institutional requirements. Written informed consent for participation was not required from the participants or the participants' legal guardians/next of kin in accordance with the national legislation and institutional requirements.

Author contributions

YZ: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration,

Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing.

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